

CLAIMS

1. An arrangement for attaching a dental instrument to a tool-holder assembly for the attachment and rotational driving of a dental tool or instrument about a driving axis (6), said tool-holder assembly (24) being integrated into a head (4) of a dental handpiece and connected to a movement transmission assembly integrated in a handle (3) of said handpiece (1),

(a) characterized in that it is composed principally of a deformable and elastic tightening and releasing means in the form of a belt (25, 56, 65), of which at least one part exhibits a section adapted to engage in an annular slot or groove that is provided in the upper part of the instrument and is adapted to retain said instrument by tightening forces, said tightening and releasing means also comprising means for the application of releasing forces for canceling out the tightening forces for the purpose of releasing the instrument,

(b) and characterized in that the tightening and releasing means has the function of providing upper axial limitation of the instrument by bearing beneath the upper shoulder of said groove,

(c) and characterized in that the parts (39, 79) of the tightening and releasing means that engage in the annular slot or groove are regularly spaced apart angularly.

2. The attachment arrangement as claimed in claim 1, characterized in that the attachment arrangement is detachable in relation to the tool-holder (24).

3. The attachment arrangement as claimed in either of claims 1 and 2, characterized in that the belt (25) made of a deformable elastic material exhibits a form that is

essentially that of a parallelogram having a central zone (39) provided for the purpose of retaining the head (40) of the instrument tightly in place in a slot, the large diagonal of the parallelogram being provided in order to ensure that its two extremities extend diametrically beyond the envelope of the head (4) as two projections (42), each located in a notch (43) in the head, the two projections constituting means for the application of forces, manually and directly, for releasing the belt.

4. The attachment arrangement as claimed in claim 3, characterized in that the belt (25) comprises detachments (45) provided in the proximity of the projections (42) and resting on the periphery (46) of a housing (26) in the head.

5. The attachment arrangement as claimed in claim 3, characterized in that the elastic belt (25) in the form of a parallelogram and having a central zone (39) provided in order to retain the instrument tightly in place comprises two lugs (54) forming projections perpendicular to the plane of the belt and situated on the same side as the latter, which two lugs constitute means for the application of tightening forces via the intermediary of a barrel-pinon positioned on the head of the handpiece.

6. The arrangement as claimed in claim 4, characterized in that the lugs comprise conical flanges (60).

7. The attachment arrangement as claimed in one of claims 3 to 6, characterized in that the belt has a conical part (64) made on the undersurface of the central zone (39).

8. The attachment arrangement as claimed in claims 5 and 6, characterized in that it also comprises a push-button made of a plurality of component parts, namely:

- an elastic ring (56) at the lower extremity, which retains the push-button on the head (4),
- an intermediate elastic zone (57), which plays the role of a return spring for the push-button,

- an internal cylindrical insert (58), which, when the push-button is pressed, causes the elastic belt to deform, thereby releasing the tool.

5 9. The attachment arrangement as claimed in one of claims 6 to 8, characterized in that the insert (58) has an internal conical form (59) in order to interact with the conical sidewalls (60) of the lugs of the belt.

10 10. The attachment arrangement as claimed in either of claims 1 and 2, characterized in that the elastic belt made of a deformable material exhibits the form of a split annular clip (72) comprising an annular shoulder (79) adapted to engage in an annular slot (28) in the instrument and a conical part (71) in order to interact with a conical part of a push-button.

15 11. The attachment arrangement as claimed in claim 10, characterized in that the split ring comprises a conical part (73) provided on the undersurface of the split ring for the introduction of the instrument.

20 12. The attachment arrangement as claimed in claim 11, characterized in that it also comprises a push-button (55) guided axially by one or more sectors (87) arranged on the undersurface and each terminated by a conical extremity (70).

25 13. The attachment arrangement as claimed in claim 11, characterized in that it also comprises a push-button (55) comprising elastic blades (75) cut into its cap and terminated clipping slots (80) and a conical base (78).

30 14. The attachment arrangement as claimed in either of claims 1 and 2, characterized in that it also comprises a push-button for the application of releasing forces on the tightening and releasing means.

15. The attachment arrangement as claimed in claim 14, characterized in that the push-button is integral with the tool-holder.

35 16. The attachment arrangement as claimed in either of claims 14 and 15, characterized in that the push-button is retained by means of a clip in an opening in the head.